

Appl. No.: 09/586,869
Amendment dated August 18, 2004
Reply to Office Action of May 18, 2004

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (previously presented) A method of producing a depth map comprising the steps of:
identifying at least one object within a 2D image;
allocating an identifying tag to the at least one object;
allocating a depth tag to the at least one object; and
determining and defining an outline for the at least one object.
2. (previously presented) The method as claimed in claim 1 wherein the object outline is defined by a series of co-ordinates, curves and/or geometric shapes.
3. (previously presented) The method as claimed in claim 1 or 2, wherein said identifying tag is a unique number.
4. (previously presented) The method as claimed in claim 1 or claim 2, wherein identifying said at least one object occurs prior to said determining and defining step and includes the step of comparing said 2D image with a library of generic scenes.
5. (previously presented) The method as claimed in claim 1 or claim 2, wherein the step of determining the outline further includes tracing the at least one object pixel by pixel.
6. (previously presented) The method as claimed in claim 1 or claim 2, wherein the step of determining the outline further includes using straight lines to approximate the outline of the at least one object.
7. (previously presented) The method as claimed in claim 1 or claim 2, wherein the step of determining the outline further includes using curve approximations to approximate the outline of the at least one object.

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8. (previously presented) The method as claimed in claim 1 or claim 2, wherein the step of determining the outline further includes using bezier curves to approximate the outline of the at least one object.
9. (previously presented) The method as claimed in claim 1 or claim 2, wherein the step of determining the outline further includes comparing the object with a library of curves and/or generic or geometric shapes to approximate the outline.
10. (previously presented) The method as claimed in claim 9 further including scaling the curve and/or generic or geometric shape to best fit the at least one object.
11. (previously presented) The method as claimed in claim 1, wherein the depth tag includes a color code.
12. (currently amended) The method as claimed in claim 1, wherein white represents one of objects relatively close to the viewer_or objects relatively distant from the viewer and black represents the other of objects relatively close to the viewer and objects relatively distant from the viewer.
13. (previously presented) The method as claimed in claim 1, wherein said depth tag is a numerical value.
14. (previously presented) The method as claimed in claim 13, wherein said numerical value ranges from 0 to 255.
15. (previously presented) The method as claimed in claim 1, wherein said at least one object is further divided into a plurality of segments, each segment being assigned a depth tag.
16. (previously presented) The method as claimed in claim 15, wherein the variation in depth of the at least one object is defined by a ramp function.

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17. (previously presented) The method as claimed in claim 16, wherein said ramp function is a linear or radial ramp.
18. (previously presented) The method as claimed in claim 1 further including tracking the at least one object on successive frames of the image, and determining and assigning depth tags for the at least one object in each respective frame.
19. (previously presented) The method as claimed in claim 1 further including adding a texture bump map to the at least one object.
20. (previously presented) The method as claimed in claim 19, wherein said texture bump map is defined by breaking the at least one object into a plurality of components and assigning each component a separate depth tag.
21. (previously presented) The method as claimed in claim 19, wherein said texture bump map is defined by luminance values of individual components of the at least one object.
22. (previously presented) The method as claimed in claim 19, wherein said texture bump map is defined by chrominance, saturation, color grouping, reflections, shadows, focus and/or sharpness of individual components of the at least one object.
23. (previously presented) The method as claimed in claim 1, further including producing grayscale images of 80x60x8 bit resolution of each 2D image.

Claims 24-26 (canceled)

27. (previously presented) A method of encoding a depth map comprising:
 - allocating an object identifier to an object;
 - allocating a depth tag to said object; and
 - defining an outline of the object.

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28. (previously presented) The method as claimed in claim 27, wherein said object outline is defined by a series of x,y coordinates, each x,y coordinate being separated by a curve.

29. (previously presented) The method as claimed in claim 28, wherein each said curve is stored in a library and allocated a unique number.

30. (previously presented) The method as claimed in claim 28 or claim 29, wherein said object outline also includes data on the orientation of each curve.

31. (previously presented) The method as claimed in claim 28 or claim 29, wherein each said curve is a bezier curve.

32. (previously presented) The method as claimed in claim 27, wherein said object outline is defined by at least one geometric shape.

33. (previously presented) The method as claimed in claim 32, wherein said at least one geometric shape is defined by the form of the shape and the parameters of the shape.

34. (previously presented) The method as claimed in claim 27, wherein said allocating the depth tag includes:

allocating a type of depth; and
allocating a depth for the object.

35. (previously presented) The method as claimed in claim 34, wherein the type of depth includes single value, linear ramp, or radial ramp.

Claims 36-42 (canceled)

43. (previously presented) A method of converting 2D images into stereoscopic images applying a depth map generated according to the method of claim 1.

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44. (previously presented) A method of converting 2D images into stereoscopic images applying an encoded depth map generated according to the method of claim 27.